

LOW PROFILE DELIVERY SYSTEM FOR STENT AND GRAFT DEPLOYMENT AND METHOD FOR DEPLOYMENT

ABSTRACT

A delivery system for endoluminal deployment of a stent inside of a
5 biocompatible graft cover minimizes obstruction of endoluminal fluid flow during
deployment. The delivery system comprises a stent sheath, a compressed stent
underlying the stent sheath, and a graft overlying the stent sheath and releasably
retained in a compressed state surrounding the sheath. The graft distal end is attached
to the stent at or proximal the stent distal end, and the graft outer surface is exposed to
10 the interior space of the lumen during deployment. The proximal end of the graft may
be attached to the stent sheath by a releasable attachment adapted for release during
deployment of the stent, or may be otherwise constrained, such as by heat deformation,
to remain adjacent the outer circumference of the stent prior to deployment. The
releasable attachment may be a suture that is severed by a pusher having a cutter
15 therein. The delivery system may further include an inner core underlying the stent
and connected to a tip sheath that overlies the stent distal end. One method of
deploying the stent and overlying graft comprises advancing the tip sheath to allow the
stent distal end to expand, retracting the stent sheath to cause the suture to be severed
by the pusher cutter therefore allowing endoluminal fluid to flow between the graft and
20 the sheath, and then completing deployment of the stent to urge the graft against the
lumen wall.